

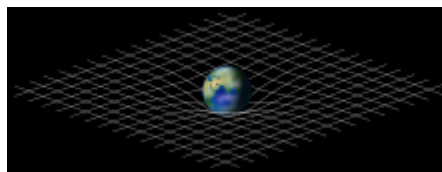
What is a white hole?

Bezverkhniy Volodymyr Dmytrovych.

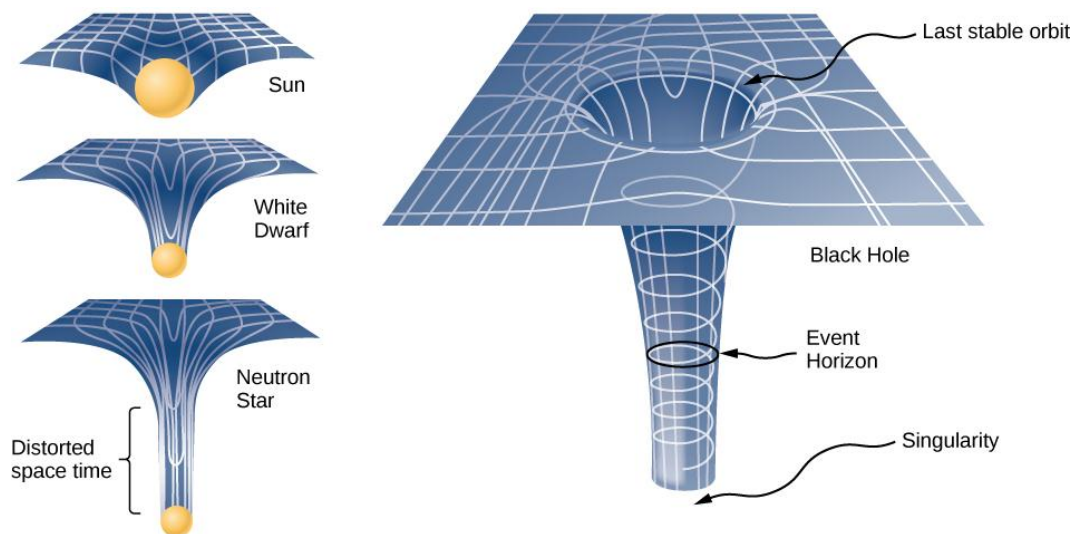
Ukraine, e-mail: bezvold@ukr.net

A white hole is a region of space-time that nothing can enter. In fact, it is the exact opposite of a black hole. Recall that a black hole is a region of space-time, which, due to gravitational attraction, cannot leave any object, not even photons of light. Since the speed of light in a black hole is less than the second cosmic speed for a given black hole.

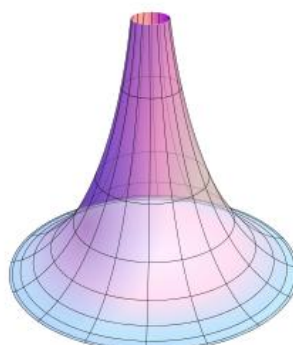
In Einstein's general relativity, gravity is considered as a curvature of space-time. Therefore, gravitational attraction can be demonstrated as curvature of a two-dimensional surface [1].



Similarly, a black hole can be thought of as a severe curvature of spacetime [2].



Then, the white hole can be thought of as a pseudosphere with the opposite curvature of space-time in relation to the black hole [3].



Next, using the analogy and properties of a black hole, we will study the properties of a white hole. The most important characteristic of a black hole is that even a body at the speed of light cannot leave it. This means that even the maximum speed in the Universe will give the body an impulse that will not be enough to leave the black hole.

Let's transfer this to the white hole. Then, by definition, a white hole should accelerate any body to the maximum possible speed in the Universe, that is, to the speed of light. Thus, any object of any mass that tries to hit the white hole will be thrown away from the white hole at the speed of light.

It may seem that white holes with such characteristics cannot exist in the real world, since a massive object (with any mass) cannot be accelerated to the speed of light. But this is not the case. It must be remembered that movement is relative. Therefore, if we fix the frame of reference on a photon, then all bodies in the Universe that try to approach the photon will be thrown away from it at the speed of light. That is, the photon will collide with the body, and the body will fly away at the speed of light (remember that the frame of reference is fixed on the photon).

Thus, we must accept that the photon is a white hole. Therefore, a photon is a region of space-time that has the opposite curvature with respect to gravity. If we accept the above, then it is quite obvious why the speed of a photon is maximum in the Universe: a photon repels any material object from itself, or vice versa. It is also obvious that photons must be the cause of the acceleration of galaxies.

1. White hole. Wikipedia. https://en.wikipedia.org/wiki/White_hole
2. The event horizon. Einstein's theory of gravity. Jobilize. <https://www.jobilize.com/physics1/test/the-evidence-for-black-holes-by-openstax>
3. Pseudosphere. Wikipedia (ru). <https://en.wikipedia.org/wiki/Pseudosphere>